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REMARKS

The application has been reviewed in light of the Office Action dated July 26, 2007. Claims 1-11 were pending. By this Amendment, claims 1 and 3-11 have been amended to clarify the claimed subject matter, and new claims 12-14 have been added. Accordingly, claims 1-14 are now pending, with claims 1 and 6-8 being in independent form.

Claims 1, 2 and 6-11 were rejected under 35 U.S.C. § 102(b) as purportedly anticipated by Ukita et al. (US 2003/0016791 A1).

Applicant has carefully considered the Examiner's comments and the cited art, and respectfully submits that independent claims 1 and 6-8 are patentable over the cited art, for at least the following reasons.

This application relates to techniques for producing highly accurate tomographic images of a subject from projection data produced based on data obtained from a detector comprised of a plurality of detector elements, detecting rays of a radiation source irradiated to and penetrated through the subject.

Applicant devised an improved approach wherein an image reconstruction area corresponding to a region of interest of the subject is divided into image data segment regions, image reconstruction is based on the divided image data segment regions from the projection data and a 3-dimensional tomographic image is generated, wherein 2-dimensional projection data segment regions corresponding to channel direction and row direction of the detecting means necessary for generating the 3-dimensional tomographic image of the divided image data segment regions are extracted from the projection data, and 3-dimensional back projection processing is performed for every corresponding image data segment regions by making use of the extracted projection data segment regions. Each of independent claims 1 and 6-8 addresses these features, as well as additional features.

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Ukita (US 2003/0016791 A1) is the U.S. counterpart of JP-A-2003-24326 which is discussed in the background section of the present application ([0014], [0015]) and was submitted with the Information Disclosure Statement filed with this Section 371 application on July 21, 2006.

Ukita, as understood by applicant, proposes a tomographic device in which back projection computation for performing back projection on 2-dimensional or 3-dimensional tomographic image reconstruction area imaginarily set on a region of interest of a subject is performed by a computer for every divided region formed by dividing the tomographic image reconstruction area.

However, in order to perform back projection on the divided tomographic image reconstruction region stored in the high speed cache memory, the device proposed by Ukita has to store in the cache memory *all* of the projection data corresponding to each unit area of a plurality of radiographic data.

On the other hand, in the claimed subject matter of the present application, only necessary projection data of 2-dimensional projection data segment regions for every divided image data segment regions are extracted (that is, only the subset of regions that are necessary are extracted) to further limit the amount of cache memory.

Ukita, [00220], which is reproduced below, was cited in the Office Action:

[0022] Based on such findings, this invention provides reconstruction software for performing back projection computations to project radiographic data of an object acquired in each scan position back to a reconstruction area. The software comprising the step of causing the back projection computations to be performed, for each unit area formed by dividing the reconstruction area, for projecting the radiographic data acquired in each scan position, or data resulting from filtering of the radiographic data, back to a two-dimensional or three-dimensional reconstruction area virtually set to a region of interest of the object. The radiographic data being acquired by causing a radiation source and a detector arranged opposite each other across the object to scan the object synchronously, or to scan the object synchronously with rotation of the object, the radiation source

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irradiating the object with electromagnetic waves capable of penetrating the object, the detector detecting electromagnetic waves transmitted through the object.

Thus, Ukita proposes, in a general manner, performing back projection of the radiographic data to a two-dimensional or three-dimensional reconstruction area virtually set to a region of interest of the object.

However, Ukita does *not* disclose or suggest specifically to extract or cut out 2-dimensional projection data segment regions from the radiographic data for respective divided three-dimensional reconstruction area.

Since the cited art does not teach or suggest each and every feature of the subject matter of claim 1 of the present application, claim 1 of the present application is submitted to be allowable over the cited art.

Independent claims 6-8 are patentably distinct from the cited art for at least similar reasons.

Accordingly, for at least the above-stated reasons, Applicant respectfully submits that independent claims 1 and 6-8, and the claims depending therefrom, are patentable over the cited art.

In view of the amendments to the claims and remarks hereinabove, Applicant submits that the application is now in condition for allowance. Accordingly, Applicant earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Patent Office is hereby authorized to charge any fees that are required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.


If a telephone interview could advance the prosecution of this application, the

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Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,



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